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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/668,763

09/23/2003

Xin Jin

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04/06/2005

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EXAMINER

LAU, TUNG S

ART UNIT

PAPER NUMBER

2863

DATE MAILED: 04/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/668,763

Applicant(s)

JIN ET AL.

Examiner

Tung S. Lau

Art Unit

2863

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 25 March 2005.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 23-56 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 23-56 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date See office action.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### **Information Disclosure Statement**

1. Information Disclosure Statement filed on 3-25-2005 is acknowledged by the examiner; A copy of a signed PTO-1449 attached with this office action.

### **Specification**

2. The Amendment to the specification has been accepted by the examiner.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 23, 25, 26, 34, 35, 31, 32, 33, 36, 37, 39, 40, 41, 44, 46, 47, 48, 49, 51,

54, 55, 56 are rejected under 35 U.S.C. 102(b) as being anticipated by Satake et al. (U.S. Patent 6,198,254).

Regarding claim 23:

Satake discloses a method of estimating a usable battery capacity for a mobile device, comprising: determining one or more operating condition of the mobile device (abstract), determining a present loaded battery voltage of the mobile device (abstract); determining a present unloaded battery voltage based on the present loaded battery voltage and one or more operating condition (Col. 2-3, Lines 44-22); determining a present battery capacity using the present unloaded battery voltage (Col. 2-3, Lines 44-22, fig. 5); determining a loaded operational

threshold voltage of the mobile device (Col. 2-3, Lines 44-22), the loaded operational threshold voltage being a battery voltage below which an operation of the mobile device is shut off (fig. 1); determining an unloaded operational threshold voltage of the mobile device based on the loaded operational threshold voltage and the one or more operating condition; determining an operational threshold capacity using the unloaded operational threshold voltage (fig. 3, 5), and estimating the usable battery capacity based on the present battery capacity and the operational threshold capacity (fig. 3, 5).

Regarding claim 37:

Satake discloses a method of estimating the capacity of a battery to power a predetermined feature of a battery operated device, the predetermined feature operable when the battery is above a corresponding shut off voltage (abstract), the method comprising: measuring a battery voltage (fig. 3); determining an unloaded battery voltage by translating the measured battery voltage to take into account a load on the battery (fig. 5); determining at least one shut off voltage by translating the shut off voltage to take into account the load on the battery (fig. 5, Col. 2-3, Lines 44-22); determining a battery capacity using the unloaded battery voltage (Col. 2-3, Lines 44-22); determining a shut off capacity using the unloaded shut off voltage (Col. 2-3, Lines 44-22, fig. 5); and estimating an estimated capacity for the predetermined feature as a difference between the shut off capacity and the battery capacity (Col. 2-3, Lines 44-22, fig. 5, 7).

Regarding claim 48:

Satake discloses a mobile device, comprising: a battery configured to power the mobile device, one or more sensor circuits configured to measure one or more operating conditions of the battery (abstract), a battery voltage measurement circuit configured to measure a present loaded battery voltage of the battery (fig. 5); a battery capacity estimation program configured to (1) determine a present unloaded battery voltage based on the present loaded battery voltage and the one or more operating conditions of the battery (fig. 7), and (2) determine a present battery capacity using the present unloaded battery voltage (Col. 2-3, Lines 44-22); the battery capacity estimation program being further configured to (1) determine a loaded operational threshold voltage of the mobile device, the loaded operational threshold voltage being a battery voltage below which an operation of the mobile device is shut off (fig. 1, 5, 7), (2) determine an the loaded operational threshold voltage of the mobile device based on the loaded operational threshold voltage and the one or more operating parameters (fig. 5), and (3) determine an operational threshold capacity using the unloaded operational threshold voltage (fig. 5, 7); and the battery capacity estimation program being further configured to estimate a usable battery capacity based on the present battery capacity and the operational threshold capacity (fig. 5, 7 (Col. 2-3, Lines 44-22)).

Regarding claim 25, Satake discloses the usable battery capacity is an available capacity, and wherein the loaded operational threshold voltage is a battery voltage below which the mobile device is shut off (fig. 5, 7); Regarding claim 26,

Satake discloses the mobile device includes a profile table that relates a plurality of battery profile values with the one or more operating conditions of the mobile device, and wherein the profile table is used to determine the present loaded battery voltage, the present battery capacity, the unloaded operational threshold voltage and the operational threshold capacity (Col. 1, Lines 37-65); Regarding claim 34, Satake discloses accessing the profile table to translate the operating condition into a battery profile value; adjusting the battery profile value by a correction factor to generate a corrected battery profile value (Col. 1, Lines 37-65, fig. 5, 7); and using the corrected battery profile value to determine the present battery capacity and the operational threshold capacity (Col. 1, Lines 37-65, fig. 1, 5, 7); Regarding claim 35, Satake discloses resistance of the battery (fig. 3, 5, 7); Regarding claims 31, 54, Satake discloses including temperature (abstract); Regarding claims 32, 55, Satake discloses including current (Col. 1, Lines 39-44); Regarding claims 33, 56, Satake discloses including transmitting power of the mobile device (Col. 1, Lines 15-49, fig. 7); Regarding claim 36, Satake discloses remaining time based on capacity (fig. 3); Regarding claim 39, Satake discloses shut off voltage (fig. 1, 3, 5); Regarding claim 40, Satake discloses determining a battery current delivered by the battery )(fig. 5, 7); determining a predetermined threshold capacity corresponding to a battery capacity required to continue to deliver the battery current for a predetermined amount of time (fig. 3); and comparing the estimated capacity to the predetermined threshold capacity (fig. 5, 7); Regarding claim 41, Satake

discloses identifying when the estimated capacity is less than the predetermined threshold capacity (fig. 5, 7); and in response to identifying that the estimated capacity is less than the predetermined threshold capacity (fig. 5, 7), triggering a predetermined action on the battery operated device (fig. 5, 7); Regarding claim 44, Satake discloses the predetermined action is displaying the estimated capacity, the estimated capacity being displayed in terms of the predetermined amount of time after which the predetermined function be shut off (fig. 1, 5, 7); Regarding claim 46, Satake discloses determining a battery current delivered by the battery occurs at the time of the battery estimation (fig. 3, 5); Regarding claim 49, Satake discloses a profile table stored in one or more memory location on the mobile device and accessible by the battery capacity estimation program (Col. 1, Lines 15-65), the profile table relating a plurality of battery profile values with the one or more operating conditions of the mobile device (Col. 1, Lines 15-65); wherein the battery capacity estimation program is configured to use the profile table to determine the present unloaded battery voltage (Col. 1, Lines 15-65, (Col. 2-3, Lines 45-9), the present battery capacity (fig. 5, 7), the unloaded operational threshold voltage and the operational threshold capacity (fig. 5, 7); Regarding claim 51, Satake discloses the loaded operational threshold voltage is a battery voltage below which the mobile device is shut off (fig. 13, 5, 7); Regarding claim 47, Satake discloses 47 determining an unloaded battery voltage by translating the measured battery voltage to take into account the load on the battery includes the step of determining at least one operating condition

for the battery operated device selected from the group consisting of determining an effective serial resistance for the battery (fig. 3), determining a temperature of the battery operated device (abstract), applying a correction parameter, determining the transmit power, and determining an idle state (fig. 3, 5, 7).

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

a. Claims 24, 38, 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Satake et al. (U.S. Patent 6,198,254) in view of Branham (U.S. Patent 4,297,639) .

Satake discloses the method and device including the subject matter discussed above except use of radio wireless network, Branham discloses radio wireless network (Col. 1, Lines 20-39), in order to connect mobile devices for easy communication (Col. 1, Lines 20-39).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Satake to have the use of radio wireless network taught by Branham in order to connect mobile devices for easy communication (Col. 1, Lines 20-39).



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b. Claims 27, 28, 29, 30, 42, 43, 45, 52, 53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Satake et al. (U.S. Patent 6,198,254) in view of Weiss (U.S. Patent 5,949,219).

Satake discloses the method and device including the subject matter discussed above except issue a warning, Weiss discloses issue a warning (Col. 2, Lines 14-27), in order not to get stranded even having the mobile device (Col. 2, Lines 14-27).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Satake to have issue a warning taught by Weiss in order not to get stranded even having the mobile device (Col. 2, Lines 14-27).

### ***Response to Arguments***

5. Applicant's arguments with respect to claims invention have been considered but are moot in view of the new ground(s) of rejection. However, applicant's arguments filed 3/25/2005 have been fully considered but they are not persuasive.

### **Conclusion**

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tung S Lau whose telephone number is 571-272-2274. The examiner can normally be reached on M-F 9-5:30. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Barlow can be reached on 571-272-2269. The fax phone numbers for the organization where this application or proceeding is assigned is 703-872-9306. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR

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system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TL

**BRYAN BUI**  
**PRIMARY EXAMINER**

*B. Bui*  
3-31-05